ADDENDUM

HOSPITAL INFORMATION COMMUNICATIONS TECHNOLOGY (ICT) INVENTORY

This addendum to the SHIP Grant Program Annual Report for FY 2004 is an inventory of 2004 projected use of funds for information communications technology (ICT) and was compiled as a means to begin to understand the current status of ICT use in small rural hospitals.

DATA AND METHODS

Data was abstracted from the 1523 completed hospital grant application forms that asked for "unmet needs" and "use of funds" in the three SHIP categories of PPS, HIPAA and QI. These questions were open-ended and did not ask specifically whether funds would be used to purchase ICT. The information that hospitals offered was categorized by technology use and further summarized to provide an overview of ICT purchases with SHIP grant funds. Hospitals fund multiple projects with SHIP grant funds; therefore, some of the data included in this overview is duplicative.

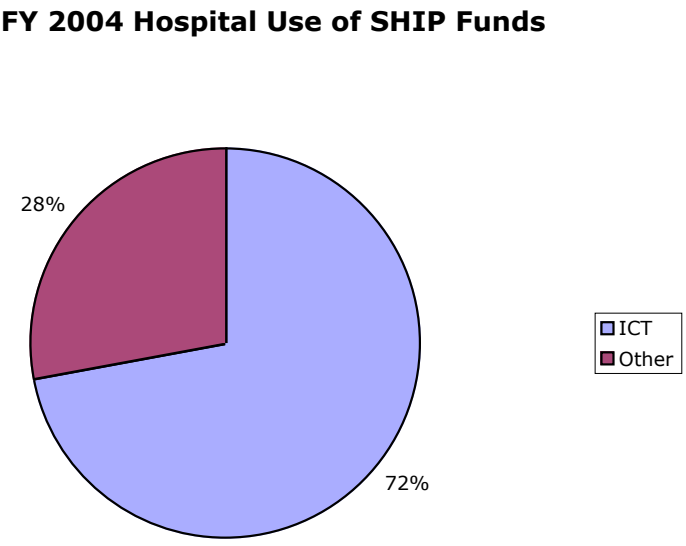

Figure 7: Of the 1,523 participating SHIP hospitals, 1,095 or 72 percent used some or all of their grant funds to invest in information communications technology.

The following categories were defined for data abstraction from hospital applications:

- ICT infrastructure (hardware, software, licensing, communications)
- Business office (coding, billing, accounting applications)

- Ancillary services (lab and radiology only)
- Health Information Management (physician and/or nurse order entry, electronic health records, clinical notes, storage and archiving of records)
- Quality improvement (clinical QI initiative applications)
- Pharmacy information technology
- Telehealth
- Online education
- Data benchmarking

For the purposes of the FY 2004 annual report, data was collapsed into the following categories:

- ICT infrastructure
- Quality improvement applications (ancillary services, health information management, clinical QI, pharmacy, telehealth, online education and data benchmarking)
- Business office applications

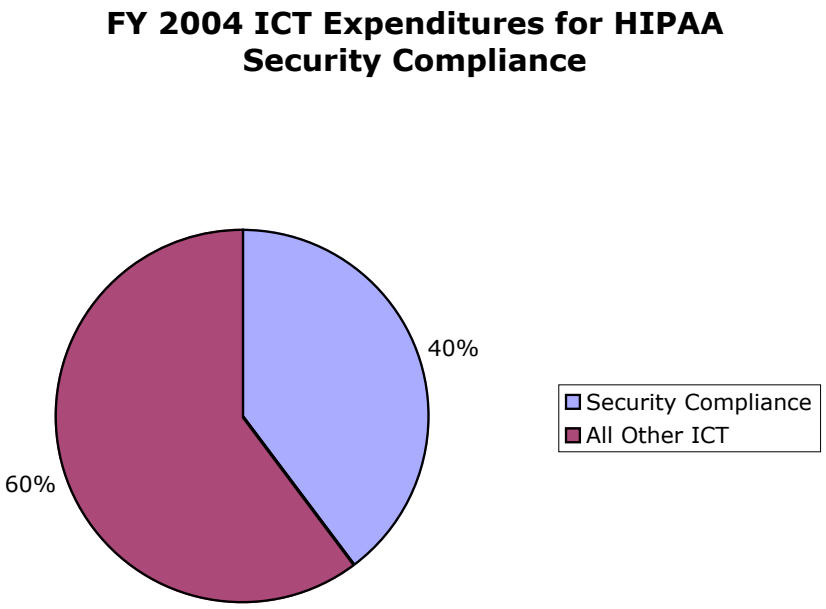

Figure 8: In a separate count of ICT purchases in all categories listed above, forty percent (436 hospitals) identified their investments as specific to compliance with the HIPAA security rule.

RESULTS

INFRASTRUCTURE

Seventy percent, or 771, of these hospitals used SHIP grant funds to purchase or upgrade hardware and software infrastructure – information technology that serves as the foundation for business office, security and quality improvement functions.

Examples of computer infrastructure purchases include:

- Upgrading to desktop computers from un-secure dummy terminals
- Upgrading operating systems to a version that would support current privacy and security need
- Purchasing a new server with firewalls and encryption capabilities
- Additional PCs, laptops and printers to increase staff and provider access to data

Examples of communications technology infrastructure purchases include:

- T1 lines and high speed Internet access, wireless networking
- Digital dictation and transcription equipment
- New electronic (some biometric) identification systems for patients and staff

BUSINESS OFFICE

Twelve percent (127) of the ICT hospitals expended funds for hardware or software related to business office functioning such as coding, billing or accounting software.

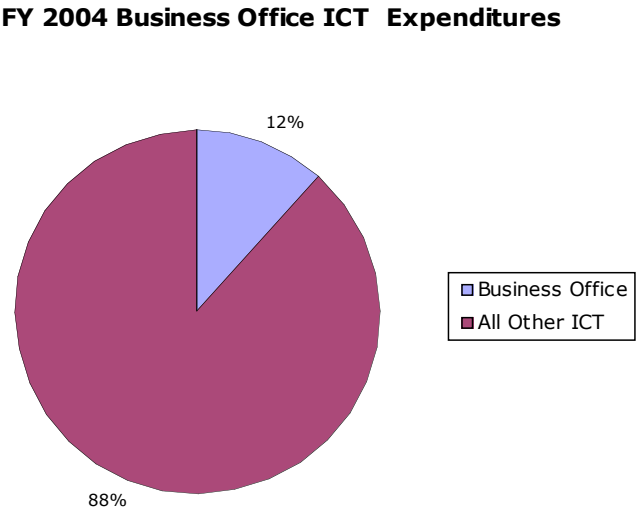

Figure 9: 12 percent of hospitals acquired ICT for accounting, billing and coding purposes

QUALITY IMPROVEMENT

Fifty-eight percent (633) of hospitals purchased technology and applications for use in the category of quality improvement and reduction of medical errors.

QI encompasses the following categories:

- Pharmacy IT
- Clinical quality improvement
- Health information management (order entry, chart notes, records archiving)
- Benchmarking databases
- Online education for staff and patients
- Ancillary services (radiology and laboratory)
- Telehealth

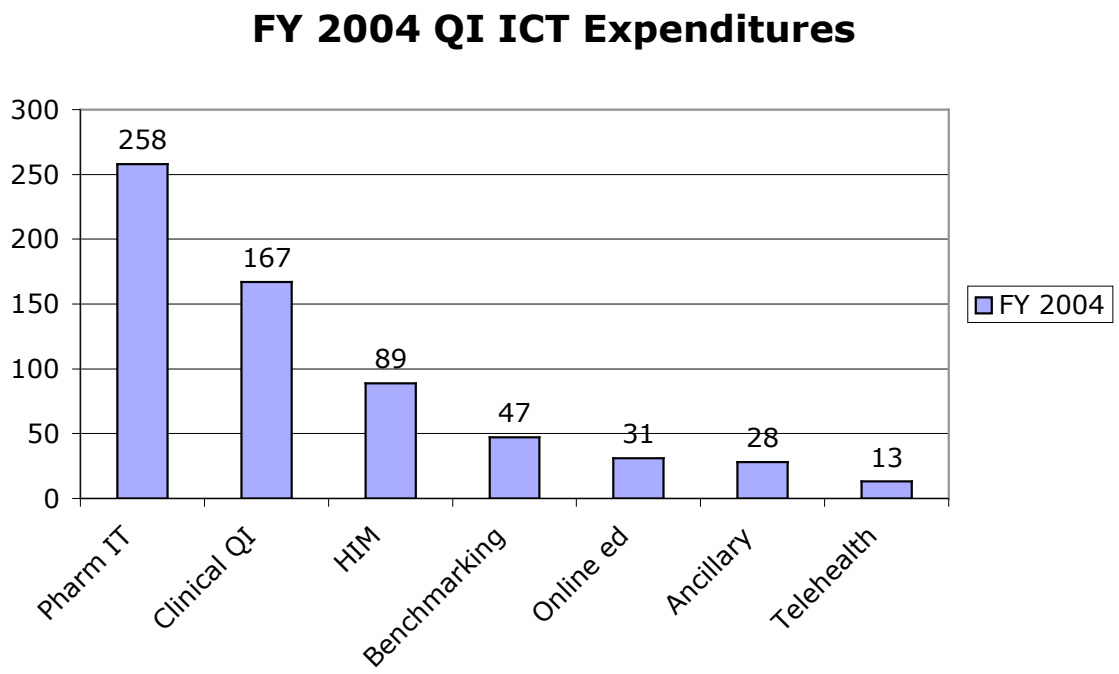

Figure 10: 633 hospitals allocated SHIP funds for Quality Improvement ICT initiatives; primarily for pharmacy and clinical quality applications

PHARMACY INFORMATION TECHNOLOGY

Forty-one percent (258) of QI investments were in pharmacy information technology. Examples include:

- Medication dispensing systems
- Bar coding and hand-held scanning devices
- Automated medication administration records (MAR) and pharmacy labeling systems
- Remote pharmacist access
- Medication error databases

- Medication verification systems
- PDAs and software for prescribing and drug reference
- Pharmacy computer hardware and software systems
- Modules to link pharmacy with hospital information systems

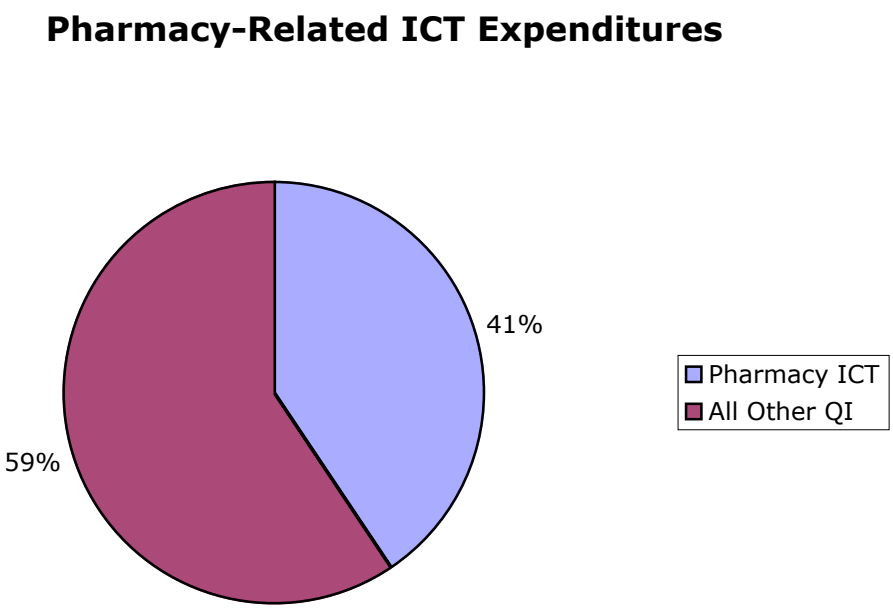

Figure 11: 41 percent of the hospitals using SHIP funds for QI-related ICT allocated those funds for pharmacy related applications.

Clinical Quality Improvement

Software and hardware purchases for clinical quality improvement activities comprised 15 percent (167) of ICT purchases. Of these, only one hospital used SHIP funds to purchase decision support software.

Examples of clinical quality improvement ICT purchases include:

- Software for tracking and reporting data associated with utilization review, quality assurance, performance improvement, quality improvement, risk management, infection control and chart auditing.
- Statistical software for occurrence and performance reporting; root cause, process verification, performance patterns, and trend analysis.
- Software and connectivity for compliance and accreditation
- Physician profiling and credentialing software

Health Information Management (HIM)

Eighty-nine, or 8 percent of hospitals purchased hardware and software for management for health information. These applications range from a full

electronic health record (EHR) to point-of-care order entry to equipment for digital storage of patient records. Many of the hospitals purchased self-contained systems for the Emergency Department that include charting, tracking, prescribing, discharge instructions, reporting and coding capabilities.

Some examples of these applications include:

- Physician and nurse order entry
- Electronic Health Record implementation
- Computerized medical record tracking systems, including bar code systems
- Bedside charting systems, wireless mobile computer consoles or carts, laptops for home health care chart notes
- Voice recognition software for dictation
- Remote access to patient information
- Archiving and digitizing patient records for storage

Benchmarking Data

For the purposes of quality improvement, it is notable that four percent (47) of the ICT hospitals invested their SHIP funds to participate or subscribe to existing network, state, regional or national benchmarking databases.

Online Education

Thirty-one hospitals (three percent) used a portion of their SHIP grant funds to set up or purchase modules for local or distance employee and patient education in the areas of quality improvement, HIPAA compliance and coding or billing updates.

Ancillary Services

Three percent (28 hospitals) invested SHIP grant funds in computerized lab or radiology information systems. In addition to the improved reporting and recording of patient results enabled by these systems, digitized imaging was cited as necessary for access to radiologists.

Telehealth

Thirteen hospitals (1.2 percent) reported using SHIP grant funds for telehealth. Eleven of the thirteen hospitals invested in tele-radiology applications.